

A pair of hands, one with a wooden prosthetic, holds a green knitted hat. The background is a dark teal color.

**What story to believe in greenwashing detection?  
About the interplay of brand story and vegan  
product status on consumers' ecological  
sustainability judgements**

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*Luise Ende*



# Thank you!

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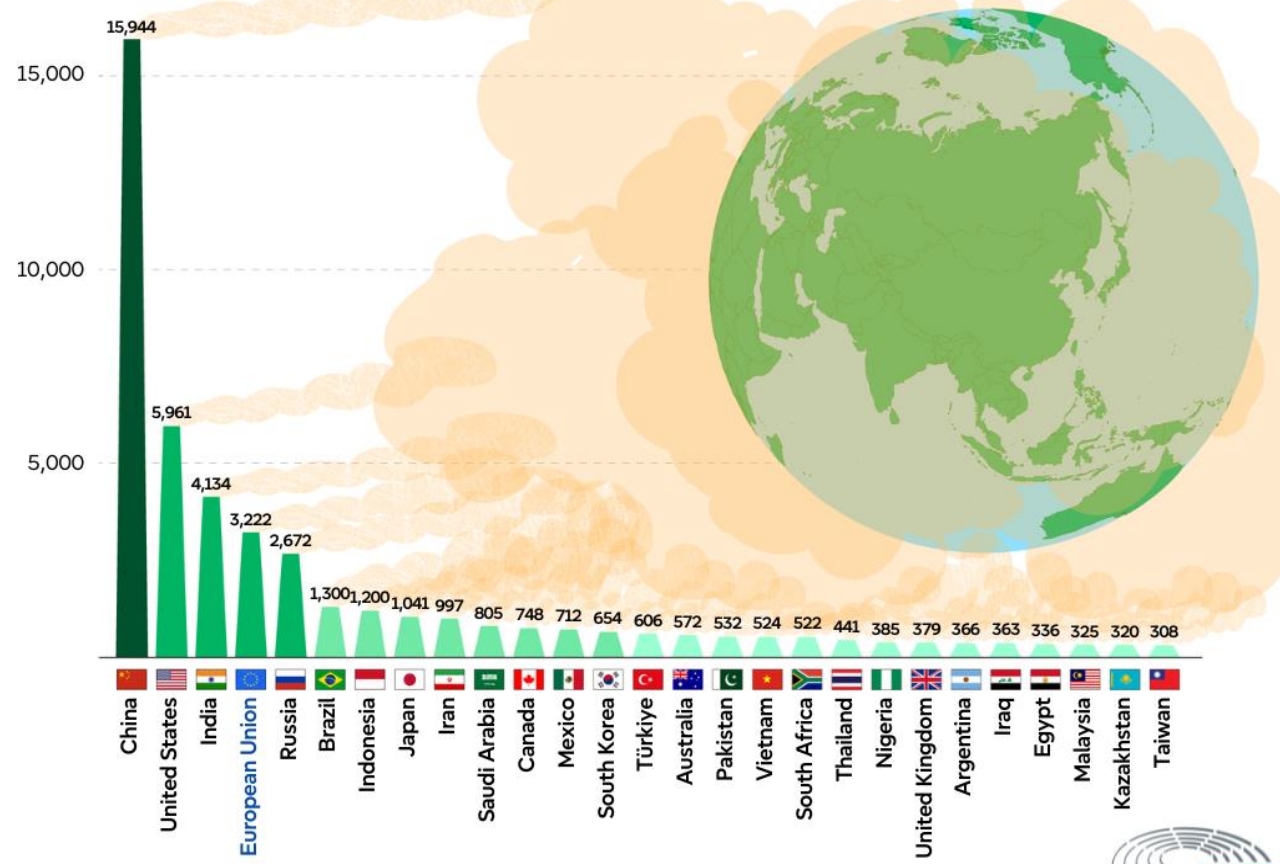
*Alina Ehrenreich, Anna Ferkel,  
Neele Holin, Dorith Müller*

*University of Kassel, Germany (HE)  
Institute for Psychology*

# Top greenhouse gas emitters in the world

(2023)

Million tonnes of CO2 equivalent



Source: Emissions Database for Global Atmospheric Research (EDGAR)



# Global net GHG emissions by sector (2020)

*Transport*

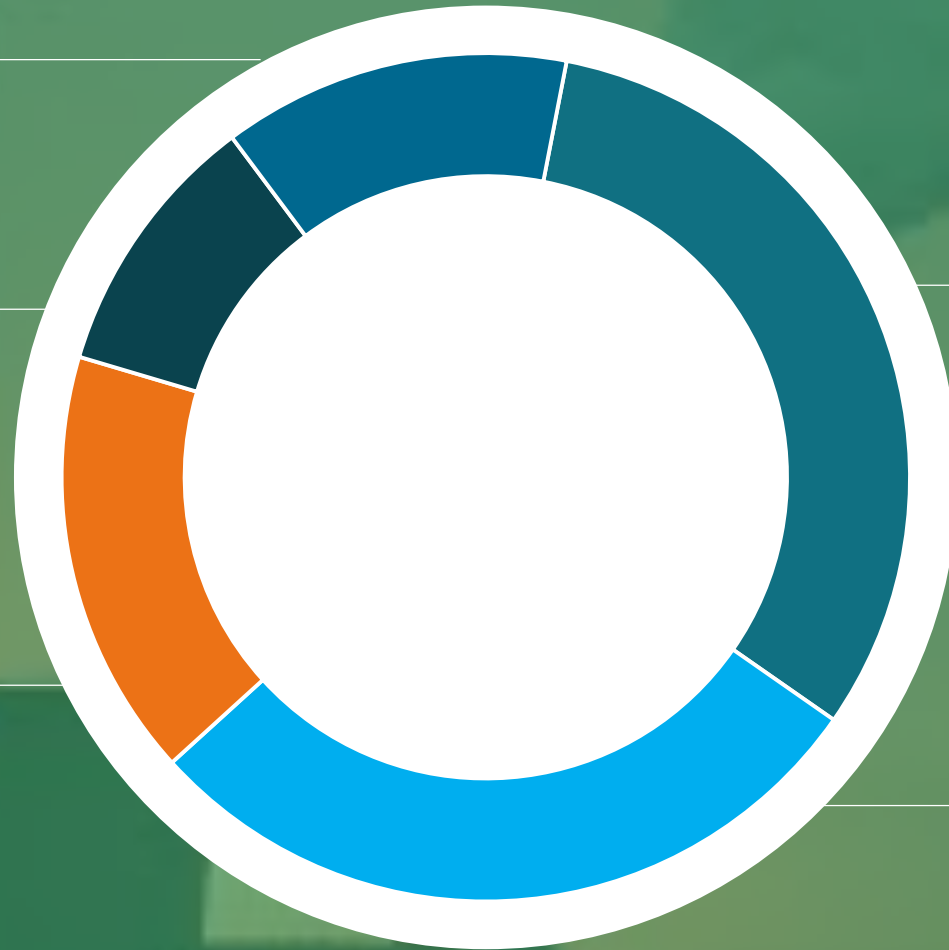
**16 %**

*Buildings*

**7 %**

*Agriculture, land  
use and landfills*

**18 %**



*Industry*

**31 %**

*Electricity*

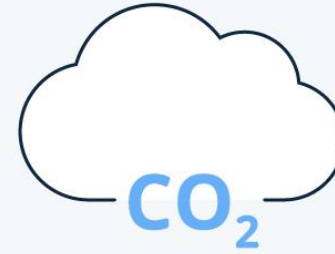
**28 %**

# Carbon footprint of milk production



# Plant-Based Milk Is 'Low-Emission' Milk

Estimated greenhouse gas emissions per liter of milk and milk alternatives\*



\* Emissions are measured in carbon dioxide equivalents and account for the processing and transportation of commodities to retail stores, but not for postproduction processing and packaging.  
Source: Michael Clark et al (2022) via Our World in Data



# A perspective on the appearance of greenwashing B2C

**Climate  
Change**

**Consumer  
Awareness**

**Market  
Adaption**

**Trend**

**Green-  
washing**



# What is “Greenwashing“

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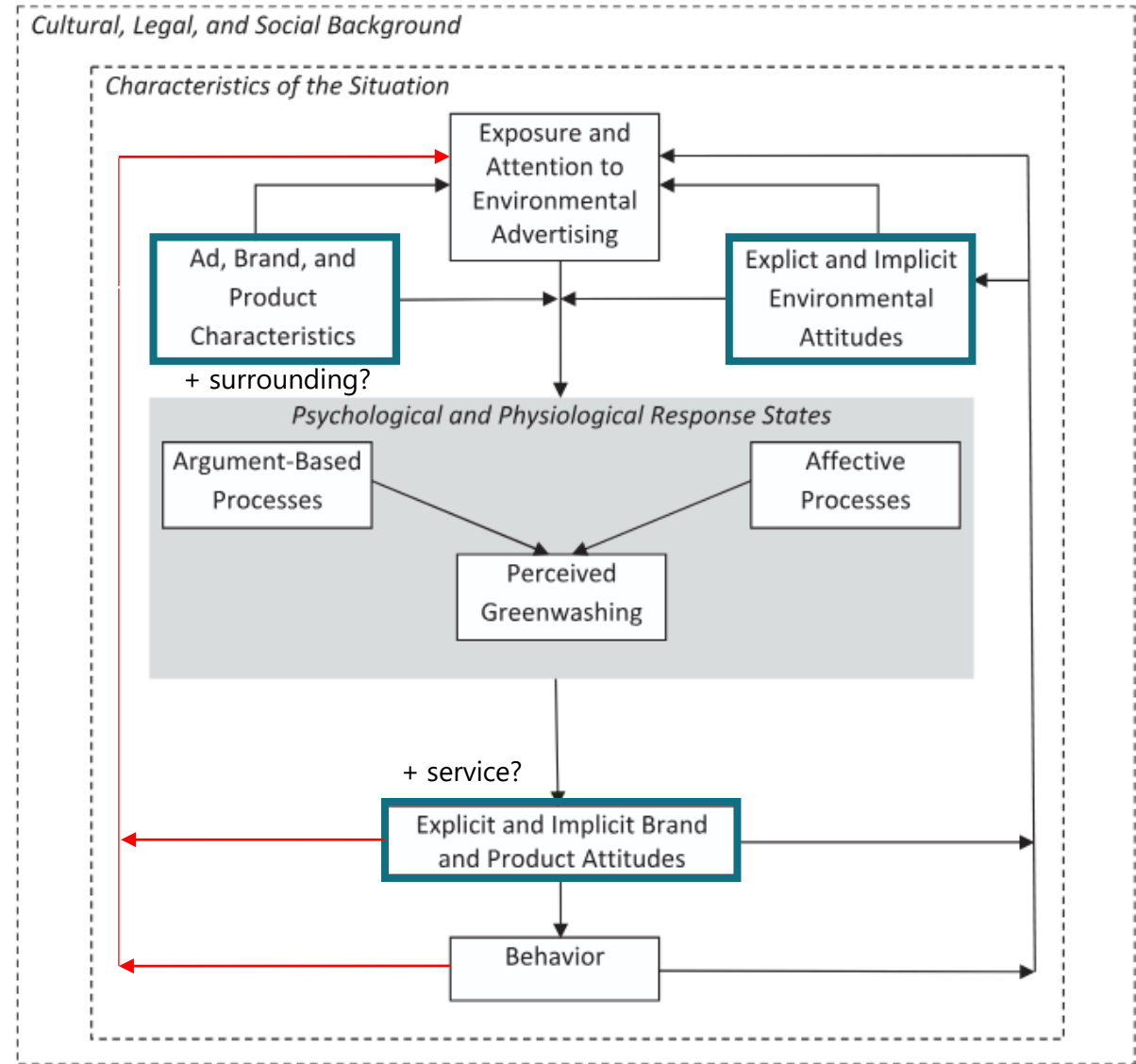
- ✓ Misleading consumers regarding the environmental impact of activities, products, services
- ✓ Change of perception, attitudes, intentions, decisions, and behavior
- ✓ Different channels of perception; here focus on framing by written information



<https://circularplace.fr/greenwashing-wenn-gruen-nur-ein-lack-ist/>

Political responses, e.g. „climate neutral“ or „environmentally friendly“ claim now has monetary consequences

Kavitha & Kumar, 2023



# Priming as influencer

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- ✓ Presenting a first stimulus that influences the perception of a following stimulus
- ✓ Top-down perception process
- ✓ Biased attitude

**Here: Combination of priming attitudes (informational texts) with the context of ecology (rated ecological impact)**

# The current study

## Hypothesis 1a

### Main effect of information

Information about not ecologically sustainable production conditions of a brand (EG) leads to significantly lower estimations of the products' ecological sustainability compared to general information about the brand (CG)

## Hypothesis 1b

### Main effect of information

Information about not ecologically sustainable production conditions of a brand (EG) leads to significantly lower estimations of the brands' ecological sustainability compared to general information about the brand (CG)

## Hypothesis 2

### Main effect of product

Vegan products (in general more ecologically sustainable) are rated significantly higher ecological sustainable compared to milk products (in general less ecologically sustainable)

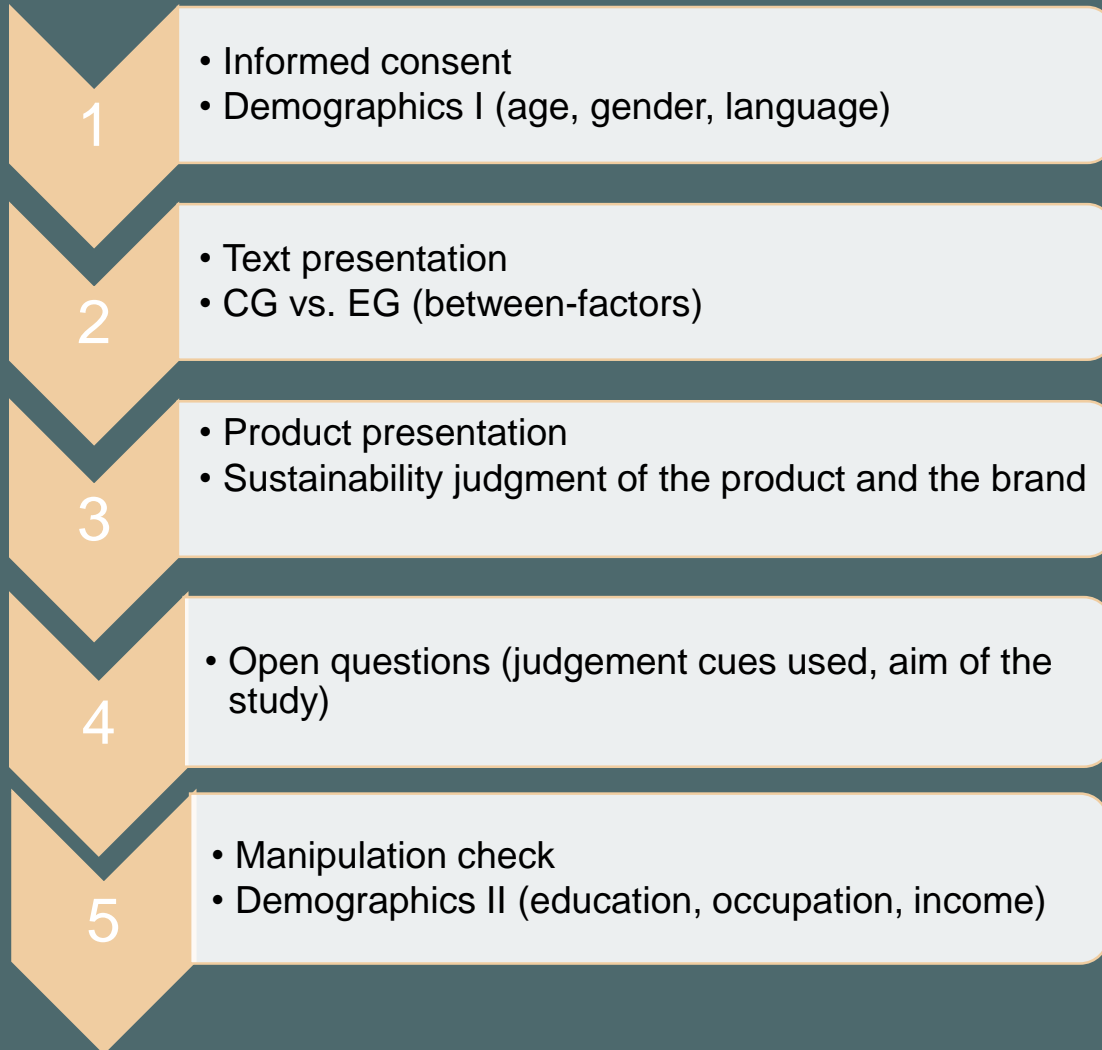


# Procedure

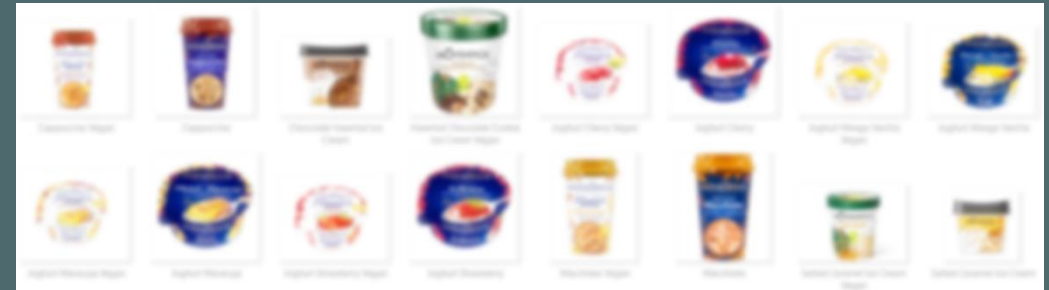


$N = 326$  participants  
mean age: 31.37 years  
SD: 14.47  
range: from 18 to 88 years

male: 101  
female: 212  
diverse: 13

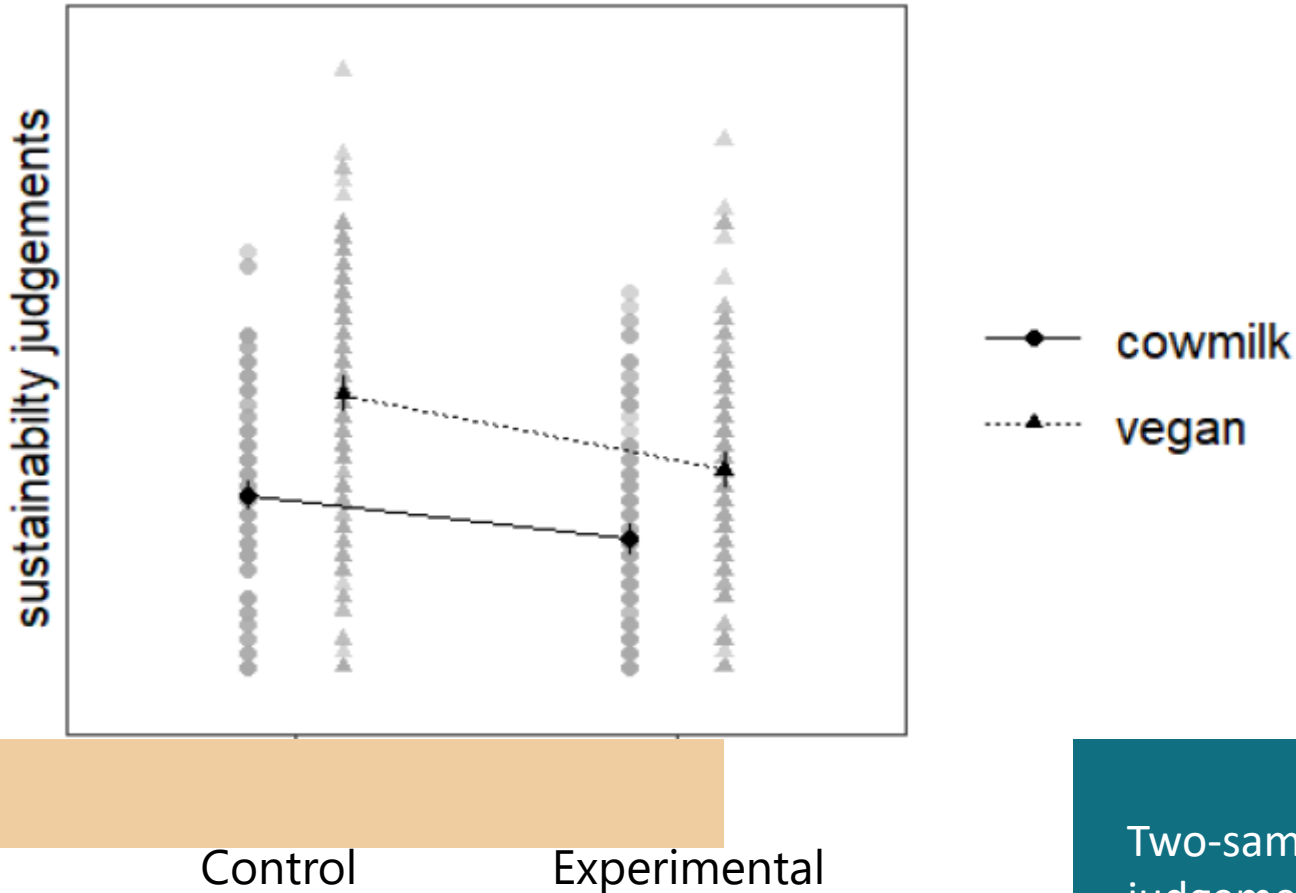


**2 x 2 mixed factorial design:**  
**Between-subjects: Prime (informational text)**  
**Within-subjects: Status of the product (vegan products vs. cow milk products)**



- **Ecological sustainability judgements** of the products, directly after each presented product.
- At the end of the study, one ecological sustainability judgement of the brand.
- Both measures: 7-point Likert scale (1 = *not ecologically sustainable at all*, 7 = *very ecologically sustainable*)
- **Confidence rating** concerning judgements (0-100%).

# Results



Judgements of the ecological sustainability of cowmilk and vegan products depending on the priming condition

## ✓ Main effect information priming

- $F(1,324) = 32.31, p < .001, \eta p2 = .09$
- $t(324) = 5.68, p < .001$

## ✓ Main effect product status

- $F(1,324) = 231.80, p < .001, \eta p2 = .42$
- $t(324) = -15.26, p < .001$

## ✓ Interaction effect

- $F(1,324) = 7.62, p = .007, \eta p2 = .02$
- EG: Effect of product-status,  $t(324) = -12.88, p < .001$
- CG: Effect of product-status,  $t(324) = -8.71, p < .001$

Two-sample t-test, comparing ecological sustainability judgements of the brand between information conditions.

→ main effect of information priming,  $t(324) = 4.43, p < .001$

Condition	Product-Status			
	Cowmilk		Vegan	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Control group	2.55	0.89	3.46	1.15
Experimental group	2.15	0.86	2.78	0.94

# Discussion

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- ✓ Information priming was effective regarding the product rating and the brand rating
- ✓ Vegan product status has an influence on the product rating
- ✓ Priming in terms of knowledge about non-ecologically sustainable production conditions of a brand could help to prevent greenwashing

# Implications

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- ✓ Informational texts can have an impact
- ✓ Clear and true communication should be targeted
- ✓ Be aware of scepticism in consumers



# Abstract

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## **What story to believe in greenwashing detection? About the interplay of brand story and vegan product status on consumers' ecological sustainability judgments**

This study investigated how information about ecologically unsustainable production practices influences consumers' perceptions of the ecological sustainability of products and brands, with a particular focus on vegan versus dairy products. In an online experiment (total N = 326), participants were exposed to information either highlighting the ecologically unsustainable production practices of a brand, or presenting the brand in a neutral way (between-subjects design). They then evaluated the ecological sustainability of vegan and cow milk products from the brand. It was hypothesised that knowledge of unsustainable production conditions would lower the sustainability ratings of both the brand and its products, and that vegan products would be considered more ecologically sustainable than dairy products. Two main effects consistent with these hypotheses were found. Additionally, the magnitude of the difference between vegan and dairy products decreased when participants were informed about unsustainable production practices, suggesting that negative brand-related information mitigated the impact of product type on sustainability inferences. Overall, the findings suggest that providing consumers with knowledge about ecologically unsustainable production practices may enhance their ability to critically evaluate sustainability claims and reduce their susceptibility to greenwashing.

*Keywords:* Greenwashing Detection; Consumer Deceiving; Information Perception; Packaging Cues; B2C Market; Vegan Food Product

# THANK YOU!

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